AMENDMENT TO THE CLAIMS

Please amend Claims 18, 47, and 52 and add new claims 53 - 80, as follows:

1-12. (Cancelled)

13. (Withdrawn) A method of bonding a first body to a second body comprising the steps of: disposing between the first body and the second body, a freestanding reactive multilayer foil; pressing the bodies together against the foil; and igniting the reactive foil.

14. (Withdrawn) The method of claim 13 wherein at least one of the bodies is a semiconductor or microelectronic device.

15. (Withdrawn) The method of claim 13 wherein the reactive multilayer foil has a thickness in excess of 10μm.

16. (Withdrawn) The method of claim 13 wherein the bodies have coefficients of thermal expansion differing by at least 1 μm/m/°C.

17. (Withdrawn) The method of claim 13 wherein the first body comprises metal and the second body comprises ceramic material.

18. (Currently Amended) A product made by a method of bonding a first body to a second body comprising the steps of:

disposing a freestanding reactive multilayer foil between the first body and the second body,

pressing the bodies together against the freestanding reactive multilayer foil; and

igniting the freestanding reactive multilayer foil,

wherein the product comprises a reacted multilayer foil having a heat of formation more negative than -30kJ/mol-atom and a thickness of greater than or equal to 60 μm.

19-39. (Cancelled)

40. (Withdrawn) A method of bonding a first body to a second comprising the steps of: disposing between the first body and the second body, a freestanding reactive multilayer foil and at least one layer of meltable joining material; pressing the bodies together against the foil and joining material; and igniting the reactive foil to melt the joining material.

41. (Withdrawn) The method of claim 40 wherein the joining material is coated on the foil.

42. (Withdrawn) The method of claim 40 wherein the joining material is freestanding.

43. (Cancelled)

44. (Previously Presented) The product of claim 18, wherein at least one of the first body and the second body comprises a microelectronic device.

45. (Previously Presented) The product of claim 18, wherein the first body and the second body have coefficients of thermal expansion (CTEs) that differ by more than about 1μm/m/°C.

46. (Previously Presented) The product of claim 18, wherein at least one of the first body and the second body comprises a semiconductor.

47. (Currently Amended) A bonded structure comprising:

a first body; and

a second body bonded to the first body by a joining region, wherein the joining region comprises a reacted multilayer foil having a heat of formation more negative than -30kJ/mol-atom and a thickness of greater than or equal to 60 μm.

48. (Previously Presented) The structure of claim 47, wherein at least one of the first body and the second body comprises a microelectronic device.

49. (Previously Presented) The structure of claim 47, wherein at least one of the first body and the second body comprises a semiconductor.

50. (Previously Presented) The structure of claim 47, wherein the first body and the second body have CTEs that differ by more than about 1μm/m/°C.

51. (Previously Presented) The structure of claim 47, wherein the reacted freestanding multilayer foil comprises an array of openings.

52. (Currently Amended) A bonded structure comprising;

a first body; and

a second body bonded to the first body by a joining region, wherein the joining region comprises a compound having a heat of formation more negative than -30kJ/mol-atom having a thickness of greater than or equal to 60 μm and a joining material.

53. (New) The product of claim 18, wherein the reacted multilayer foil comprises silicon and elements selected from the group consisting of Rh and Ni.

54. (New) The product of claim 18, wherein the reacted multilayer foil comprises aluminum and elements selected from the group consisting of Ni, V, and Zr.

55. (New) The product of claim 18, wherein the reacted multilayer foil comprises aluminum oxide and elements selected from the group consisting of iron and copper.

56. (New) The product of claim 18, wherein the reacted multilayer foil comprises a transition metal and elements selected from the group consisting of aluminum, silicon boron, and carbon.

57. (New) The structure of claim 47, wherein the reacted multilayer foil comprises silicon and elements selected from the group consisting of Rh and Ni.

58. (New) The structure of claim 47, wherein the reacted multilayer foil comprises aluminum and elements selected from the group consisting of Ni, V, and Zr.

59. (New) The structure of claim 47, wherein the reacted multilayer foil comprises aluminum oxide and elements selected from the group consisting of iron and copper.

60. (New) The structure of claim 47, wherein the reacted multilayer foil comprises a transition metal and elements selected from the group consisting of aluminum, silicon boron, and carbon.

61. (New) A product made by a method of bonding a first body to a second body comprising the steps of:

disposing a freestanding reactive multilayer foil and at least one layer of fusible material between the first body and the second body,

pressing the bodies together against the freestanding reactive multilayer foil and at least one layer of fusible material; and

igniting the freestanding reactive multilayer foil, wherein the product comprises a reacted multilayer foil, and wherein the at least one layer of fusible material has a thickness of at least 20 μm.

62. (New) The product of claim 61, wherein the reacted multilayer foil comprises silicon and elements selected from the group consisting of Rh, and Ni.

63. (New) The product of claim 61, wherein the reacted multilayer foil comprises aluminum and elements selected from the group consisting of Ni, V, and Zr.

64. (New) The product of claim 61, wherein the reacted multilayer foil comprises aluminum oxide and elements selected from the group consisting of iron and copper.

65. (New) The product of claim 61, wherein the reacted multilayer foil comprises a transition metal and elements selected from the group consisting of aluminum, silicon boron, and carbon.

66. (New) The product of claim 61, wherein the at least one layer of fusible material has a melting point below approximately 300°C.

67. (New) A bonded structure comprising:

a first body; and

a second body bonded to the first body by a joining region comprising a reacted multilayer foil and at least one layer of fusible material,

wherein the at least one layer of fusible material has a thickness of at least 20 μm.

68. (New) The bonded structure of claim 67, wherein the reacted multilayer foil comprises silicon and elements selected from the group consisting of Rh and Ni.

69. (New) The bonded structure of claim 67, wherein the reacted multilayer foil comprises aluminum and elements selected from the group consisting of Ni, V and Zr.

70. (New) The bonded structure of claim 67, wherein the reacted multilayer foil comprises aluminum oxide and elements selected from the group consisting of iron and copper.

71. (New) The bonded structure of claim 67, wherein the reacted multilayer foil comprises a transition metal and elements selected from the group consisting of aluminum, silicon boron, and carbon.

72. (New) The bonded structure of claim 67, wherein the at least one layer of fusible material has a melting point below approximately 300°C.

73. (New) A product made by a method of bonding a first body to a second body comprising the steps of:

disposing a freestanding reactive multilayer foil, a wetting/adhesion layer, and at least one layer of fusible material between the first body and the second body;

pressing the bodies together against the freestanding reactive multilayer foil and fusible material; and

igniting the freestanding reactive multilayer foil,

wherein the product comprises a reacted multilayer foil having a heat of formation more negative than -30kJ/mol-atom, and wherein the wetting/adhesion layer is between the reacted multilayer foil and the at least one layer of fusible material.

74. (New) The product of claim 73, wherein the wetting/adhesion layer comprises copper.

75. (New) The product of claim 73, wherein the wetting/adhesion layer comprises silver.

76. (New) A bonded structure comprising:

a first body; and

a second body bonded to the first body by a joining region comprising a reacted multilayer foil, a wetting/adhesion layer, and at least one layer of fusible material, wherein the wetting/adhesion layer is between the reacted multilayer foil and the at least one layer of fusible material,

and wherein the reacted multilayer foil has a heat of formation more negative than -30kJ/mol-atom.

77. (New) The bonded structure of claim 76, wherein the wetting/adhesion layer comprises copper.

78. (New) The bonded structure of claim 76, wherein the wetting/adhesion layer comprises silver.

79. (New) A product made by a method of bonding a first body to a second body comprising the steps of:

disposing a freestanding reactive multilayer foil and at least one layer of gold between the first body and the second body,

pressing the bodies together against the freestanding reactive multilayer foil and at least one layer of gold; and

igniting the freestanding reactive multilayer foil,

wherein the product comprises a reacted multilayer foil and the at least one layer of gold adjacent to at least one body.

80. (New) A bonded structure comprising:

a first body; and

a second body bonded to the first body by a joining region comprising a reacted multilayer foil and at least one layer of gold,

wherein the layer of gold is adjacent to at least one body.